

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 0 836 825 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
08.05.2002 Bulletin 2002/19

(51) Int Cl.7: **A47K 10/38**

(21) Application number: **97308104.5**

(22) Date of filing: **13.10.1997**

(54) **Centre pull sheet dispensing apparatus**

Blattspender mit Innenabzug

Distributeur de feuilles à dévidage intérieur

(84) Designated Contracting States:
BE DE DK ES FI FR GB IE IT NL

(30) Priority: **16.10.1996 US 732014**

(43) Date of publication of application:
22.04.1998 Bulletin 1998/17

(73) Proprietor: **GEORGIA-PACIFIC CORPORATION**
Atlanta Georgia 30303 (US)

(72) Inventors:
• **Grasso, Kamala J.**
Wayland, MA 01778 (US)

• **Moody, John R.**
Neenah, WI 54956 (US)
• **Schaefer, Robert D.**
Wakefield, MA 01880 (US)

(74) Representative: **Moir, Michael Christopher et al**
Mathys & Squire
100 Gray's Inn Road
London WC1X 8AL (GB)

(56) References cited:
EP-A- 0 091 411 **GB-A- 2 145 693**

BEST AVAILABLE COPY

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

TECHNICAL FIELD

[0001] This invention relates to the dispensing of sheet material, and more particularly, to apparatus for dispensing individual sheets, such as paper towels, from the center of a coreless roll comprised of a plurality of the sheets.

BACKGROUND OF THE INVENTION

[0002] A number of dispensers exist in the prior art for dispensing paper toweling and the like. Some of these dispensers are of the "center pull" type wherein a web of toweling or other sheet material is pulled from the center of a coreless roll through a nozzle or other sheet restricting element forming a restricted passageway. Assuming that the individual sheets of toweling or other material are connected by perforated lines, as is common, the nozzle or other restricting element will resist pulling of the sheet material by the user, thus breaking an individual sheet from the remaining web along the perforated line interconnecting same.

[0003] It is quite common to utilize center pull nozzles which have a cone-like or funnel-shaped wall configuration. In such arrangements, the nozzle has a towel lead end entrance hole which is relatively large in comparison with the exit hole thereof. The entrance opening and the exit opening are dimensioned such that a first paper towel will separate from a following paper towel along the perforation boundary therebetween when a leading portion or end of the following paper towel exits from the exit opening.

[0004] Some problems have been encountered with center pull dispensers of the general type just described. For example, such dispensers incorporating funnels or nozzles with continuous peripheral walls present difficulties with regard to the initial threading of the toweling or other sheet material lead end due to the generally constricted nature of the passageway through which the lead end must progress and exit therefrom to a position where the lead end may be manually grasped by a consumer. Furthermore, attendants servicing the dispenser are presented with the additional problem of covers or housing members which must be moved up or down to allow access to the interior of the dispenser. This is not only awkward but can result in injury occasioned by the cover falling under the influence of gravity and striking the attendant. Then too, inadvertent pinching of the toweling or other sheet material can occur in prior art devices when the housing member or covers are closed. This can result in sheet material tearing or other problems insofar as proper operation of the dispenser is concerned.

[0005] EP 0 091 411 discloses a paper roll holder comprising a mountable housing mounted on another housing member with a central dispensing opening

about which there are tearing means. The housing may comprise a substantially cylindrical sleeve which covers the paper roll. The holder may be mounted in any position, and has protective projections positioned around the tearing teeth.

[0006] The present invention differs from EP 0 091 411 because it additionally includes a roll support plate, attachable to one of the housing members for supporting, in the housing interior, a coreless roll product on end, defining a support plate opening;

a dispensing member, mounted below and in register with the support plate opening, defining a roll product passageway communicating between the support plate opening and a restricted outlet opening, the support plate and the dispensing member defining, in register, an elongate slot, communicating with the support plate opening and the restricted outlet opening for facilitating insertion of the lead end of the supported roll product into the passageway; and

an elongate member, attachable to the housing member not bearing the roll product support plate, located in the elongate slot when the housing members are in the closed position and withdrawn from the slot when the housing members are in the open position.

[0007] Furthermore, in the present invention the housing members are relatively moveable in a generally horizontal direction. One advantage of this configuration is that it allows easier threading of the lead end of a towel compared to EP 0 091 411.

[0008] GB 2 145 693 discloses a paper roll dispenser comprising means for ensuring controlled dispensing of the roll. The material dispensed from the centre of the roll passes over a guide roller and through constricting means. This provides resistance to unravelling of the roll. Tearing off is achieved by the user pulling the material towards him, thus increasing the frictional force acting on the material by means of the constricting means.

Disclosure of the invention

[0009] This invention relates to a center pull dispenser for paper towels and other sheet material which is characterized by its simplicity and relatively low cost. Furthermore, the apparatus incorporates structure which facilitates feeding of the lead end of a roll product to be dispensed and also incorporates a cover structure which is mounted so that it is not a hazard to an individual servicing the dispenser apparatus. Cooperation of structural elements of the apparatus is such that inadvertent pinching or snagging of the product to be dispensed is considerably lessened as compared to prior art arrangements.

[0010] According to the present invention, there is provided a dispenser for a quantity of tearable web, wound as a coreless roll product and having a lead end projecting from the centre of the roll and, preferably, individually into a plurality of sheets, the dispenser

comprising in combination:

a first housing member;
a second housing member, one of the housing members, for example, the first housing member, being statically mountable while the other is mounted on or proximate thereto, for example, by pivotal mounting, the housing members being relatively moveable between a closed position wherein the housing members define a substantially closed housing interior and an open position;

characterised in that the housing members are relatively moveable generally horizontally, and wherein the dispenser further comprises a roll product support plate, attachable to one of the housing members, for example, the first housing member, for supporting, in the housing interior, a coreless roll product on end, defining a support plate opening;

a dispensing member, suitably including a downwardly converging, generally cone-shaped wall, mounted below and in register with the support plate opening, defining a roll product passageway communicating between the support plate opening and a restricted outlet opening, the support plate and the dispensing member defining, in register, an elongate slot, communicating with the support plate opening and the restricted outlet opening for facilitating insertion of the lead end of the supported roll product into the passageway; and
an elongate member, for example, an elongate rib member, attachable to the housing member not bearing the roll product support plate, for example, the second housing member, located in the elongate slot when the housing members are in the closed position and withdrawn from the slot when the housing members are in the open position.

[0011] The support plate opening and the passageway are for accommodating the lead end projecting downwardly from the center of a coreless roll product supported on end by the support plate.

[0012] The elongated member is located between the support plate opening and the restricted outlet opening.

[0013] In accordance with a preferred embodiment of the invention, the roll product support plate may have a support plate edge spaced from the support plate opening, and the dispenser may additionally comprise a plate segment attached to the housing member not bearing the roll product support plate above the elongated member, the roll product support plate forming a gap extending from the support plate opening to the support plate edge, the plate segment substantially closing the gap when the housing members are in the closed position and the plate segment being withdrawn from the gap when the housing members are in the open position.

[0014] In accordance with a further embodiment of the

invention, said elongate member may be dimensioned so that it is spaced from the dispensing member when positioned in the slot. A dispenser according to the invention may additionally comprise at least one projection projecting from the support plate into the space adjacent to the elongate slot for engagement by the lead end of a coreless roll product, supported on end by the support plate, located within the passageway thereby to resist outward movement of the lead end from the passageway through the gap.

[0015] In accordance with a still further embodiment of the invention, the first and second housing members may each include a bottom wall portion, the bottom wall portions being adjacent when the housing members are in the closed position to form a bottom wall. Suitably, the bottom wall may be located under the roll product plate and define a bottom wall opening accommodating the dispensing member.

[0016] In accordance with an embodiment of the invention the roll product support plate may be releasably attached to the housing. Suitably, the first housing member may be statically mountable and bear the roll product support plate while the second housing member may bear the elongate member.

[0017] The support plate and the dispensing member may be integrally formed. The apparatus according to the invention includes an embodiment wherein the roll product support plate may include at least one curved support plate surface defining a gap and curving in a substantially horizontal direction and wherein the plate segment may include at least one curved plate segment surface curving in a substantially horizontal direction, the curves of the curved support plate surface and the curved plate segment surface being substantially the same and the curved support plate surface and the curved plate segment surface being in close proximity when the second housing member is in the closed position.

[0018] The apparatus according to the invention also includes an embodiment wherein two opposed projections may project from the roll product support plate into the gap adjacent to the elongated slot.

[0019] The apparatus according to the invention may additionally comprise means limiting downward movement of the dispensing member relative to the bottom wall; for example, and abutment member on the dispensing member engageable with the bottom wall.

[0020] The apparatus according to the invention further includes an embodiment wherein the bottom wall opening may be positioned along a line of juncture formed by the bottom wall portions when the second housing member is in the closed position, each of the bottom wall portions including a downwardly extending bottom wall member, the downwardly extending bottom wall members being spaced apart immediately adjacent to the bottom wall opening when the second housing member is in the closed position.

[0021] In accordance with another aspect of this in-

vention, there is provided a method of loading a coreless roll product in a dispenser according to the invention, which method comprises;

opening the dispenser;
inserting the lead end projecting outwardly from the centre of the coreless roll product through the slot;
and
closing the dispenser.

[0022] The method of the invention may utilise any embodiment of the dispensing apparatus herein described. It may comprise dispensing at least one individual sheet from the loaded dispenser. It may also comprise removing a substantially depleted coreless roll product from the dispenser prior to inserting the lead end projecting outwardly from the centre of the coreless roll product through the slot.

[0023] Other features, advantages, and objects of the present invention will become apparent with reference to the following description and accompanying drawings

BRIEF DESCRIPTION OF DRAWINGS

[0024]

Fig 1 is a perspective view of dispenser apparatus constructed in accordance with the teachings of the present invention with the housing members thereof in closed condition and a paper towel lead end projecting from the bottom;

Fig. 2 is a perspective view of the apparatus in open condition and disclosing an empty interior;

Fig. 3 is a cross-sectional view taken along the line 3-3 in Fig. 1;

Fig. 4 is an enlarged bottom view of a portion of the apparatus designated by line 4-4 in Fig. 3; and

Fig. 5 is a cross-sectional view taken along line 5-5 in Fig. 3.

BEST MODE FOR CARRYING OUT THE INVENTION

[0025] Referring now to the drawings, a dispenser apparatus constructed in accordance with the teachings of the present invention includes a first housing member 10 and a second housing member 12. Second housing member 12 is pivotally mounted on the first housing member 10 by hinge 14 for movement about a substantially vertical axis, said axis being located at adjoining terminal edges of the housing members.

[0026] The second housing member is horizontally moveable about hinge 14 between a closed position shown in Fig. 1, for example, wherein the first and second housing members define a substantially closed housing interior, and an open position, the latter being illustrated in Fig. 2, for example. First housing member 10 is for mounting on a wall or other suitable support (not shown). A suitable latch structure 15 is employed

to releasably maintain the housing members closed.

[0027] Releasably attached to the first housing member is a roll product support plate 16 for supporting a coreless roll product on end. The roll product is typically a coreless paper towel comprised of a plurality of individual towels interconnected by lines of perforation. Since such towel constructions are well known, the roll towel is not shown in its entirety.

[0028] When the towel is located in the apparatus for dispensing, a lead end 22 thereof (Fig. 1) projects outwardly and downwardly from the center thereof. Support plate 16 defines a support plate opening 24 located under the center of the towel. The support plate 16 is positioned between and by support rails 26 projecting inwardly from the first housing member. Latch members 28 are utilized to releasably attach the roll product support plate to the rear wall of the first housing member. The roll product support plate is positioned above a bottom wall of the apparatus, the bottom wall being formed by bottom wall portions 30, 32 of the first and second housing members, respectively.

[0029] A dispensing member 40 is integral with and projects downwardly from the roll product support plate. Dispensing member 40 includes a downwardly converging, generally cone-shaped wall 42 defining a passageway 44 communicating with support plate opening 24 and leading from the support plate opening to a restricted outlet opening 46.

[0030] The downwardly converging, generally cone-shaped wall 42 and the support plate 16 define an elongated slot 48 extending all the way between the support plate opening and the restricted outlet opening. The support plate opening and the passageway are for accommodating the towel lead end 22 projecting outwardly from the center of the coreless towel product supported on end by the support plate. As will be seen below, the slot 48 is for facilitating insertion of the lead end into the passageway 44.

[0031] An elongated, relatively narrow, vertically oriented, elongated rib member 50 is connected to the second housing member. The rib member is positioned in the slot 48 and located between the support plate opening and the restricted outlet opening of dispensing member 40 when the second housing member is in closed position. See Figs. 3 and 5. The rib member is withdrawn from the slot when the second housing member is in the open position. See Fig. 2.

[0032] It should be noted that the rib member is narrower than the slot so that the rib member is spaced from the dispensing member when positioned in the slot and spaces are defined by the opposed sides of the rib members and the dispensing member. This arrangement lessens the likelihood of toweling being pinched between the rib and dispensing member when the second housing member is moved to its closed position. Such pinching could, of course, prevent proper operation of the apparatus during dispensing.

[0033] The roll product support plate 16 has an out-

wardly facing support plate edge 52 spaced from the support plate opening 24. The support plate forms a gap 54 extending from support plate opening 24 to edge 52. The gap is defined by spaced curved surfaces 56, 58 which diverge away from one another in a substantially horizontal direction.

[0034] Located within the confines of second housing member 12 and connected thereto is a plate segment 60, said plate segment being disposed on top of rib member 50 and oriented in a horizontal direction. The shape and size of the plate segment 60 correspond to the shape and size of gap 54 formed in the support plate. The side edges or edge surfaces of the plate segment curve in a horizontal plane. This curved configuration permits the second housing member to be moved to closed position (as well as to be moved to open position) with the support plate curved surface 56 in close proximity with one of the curved plate segment surfaces. This adds to the stability of the structure during such movement and acts as a guide to ensure correct positioning of the rib member in the elongated slot. When the second housing member 12 is completely closed, both curved edges or edge surfaces of the plate segment are in close proximity with the curved surfaces 56, 58 of the support plate.

[0035] The bottom wall comprised of bottom wall portions 30, 32 defines a bottom wall opening 66 positioned along the line of juncture formed by the bottom wall portions when the second housing member is in closed position. See Fig. 4. Each of the bottom wall portions includes a downwardly extending bottom wall member, such members being identified by reference numerals 68 and 70, combining to form structure in the general shape of a truncated cone which surrounds dispensing member 40 at the restricted outlet opening thereof. The rib member 50 extends downwardly into bottom wall member 68 so that it enters the lower end of elongated slot 48. Such an arrangement provides additional structural stability to the apparatus. An abutment member 72 is formed on dispensing member 40 and is engageable with the apparatus bottom wall to limit downward movement of the dispensing member relative to the bottom wall. The bottom wall members 68, 70 are spaced apart immediately adjacent to the bottom wall opening 66 when the second housing member is in its closed position. Such an arrangement lessens the likelihood of "pinching" of the towel lead end when the second housing member is closed.

[0036] Threading of the lead end of a towel positioned in the apparatus is readily accomplished when the second housing member 12 is in open position, the lead end simply being manually placed in the slot 48 so that it exits restricted outlet opening 46. Rib-like projections 80 projecting from the curved surfaces 56, 58 perform the function of resisting outward movement of the lead end back into the slot from passageway 44.

Claims

1. A dispenser for a quantity of tearable web, wound round as a coreless roll product and having a lead end projecting from the centre of the roll, the dispenser comprising in combination:

a first housing member (10 or 12);
a second housing member (10 or 12), one of the housing members being statically mountable while the other is mounted on or proximate thereto, the housing members being relatively moveable between a closed position wherein the housing members define a substantially closed housing interior and an open position;

characterised in that the housing members are relatively moveable generally horizontally, and wherein the dispenser further comprises a roll product support plate (16), attachable to one of the housing members for supporting, in the housing interior, a coreless roll product on end, defining a support plate opening (24);

a dispensing member (40), mounted below and in register with the support plate opening, defining a roll product passageway (44) communicating between the support plate opening and a restricted outlet opening (46), the support plate and the dispensing member defining, in register, an elongate slot (48), communicating with the support plate opening and the restricted outlet opening for facilitating insertion of the lead end of the supported roll product into the passageway; and

an elongate member (50), attachable to the housing member not bearing the roll product support plate, located in the elongate slot when the housing members are in the closed position and withdrawn from the slot when the housing members are in the open position.

2. A dispenser according to claim 1 wherein the roll product support plate (16) has a support plate edge (52) spaced from the support plate opening (24), and the dispenser additionally comprises a plate segment (60) attached to the housing member not bearing the roll product support plate (10 or 12), above the elongated member (50), the roll product support plate forming a gap (54) extending from the support plate opening to the support plate edge, the plate segment substantially closing the gap when the housing members are in the closed position and the plate segment being withdrawn from the gap when the housing members are in the open position.

3. A dispenser according to claim 1 or 2 wherein said

elongate member (50) is dimensioned so that it is spaced from the dispensing member (40) when positioned in the slot (48).

4. A dispenser according to any one of the preceding claims additionally comprising at least one projection (80) projecting from the support plate (16) into the space adjacent to the elongate slot (48) for engagement by the lead end of a coreless roll product, supported on end by the support plate (16), located within the passageway (44) thereby to resist outward movement of the lead end from the passageway through the gap (54). 5
10
5. A dispenser according to any one of the preceding claims wherein the first and second housing members each include a bottom wall portion (30, 32), the bottom wall portions being adjacent when the housing members (10, 12) are in the closed position to form a bottom wall. 15
20
6. A dispenser according to claim 5 wherein the bottom wall is located under the roll product support plate (16) and defines a bottom wall opening (66) accommodating the dispensing member (40). 25
7. A dispenser according to any one of the preceding claims wherein the roll product support plate (16) is releasably attached to the housing (10 or 12). 30
8. A dispenser according to any of the preceding claims wherein the first housing member (10) is statically mountable and bears the roll product support plate (16) while the second housing member (12) bears the elongate member (50). 35
9. A method of loading a coreless roll product in a dispenser according to claim 1, which method comprises opening the dispenser; inserting the lead end projecting outwardly from the center of said coreless roll product through the slot (48); and closing the dispenser. 40
10. A method according to claim 9 wherein the dispenser is defined in any one of claims 2 to 8. 45
11. A method according to claim 9 wherein the coreless roll product comprises a wound web individuatable into a plurality of sheets. 50

Patentansprüche

1. Spender für eine Menge abreißbaren Bahnmaterials, das als kernloses Rollenprodukt rund gewickelt ist und ein Führungsende aufweist, das in dem Mittelteil der Rolle absteht, wobei der Spender in Kombination umfasst: 55

ein erstes Gehäusebauteil (10 oder 12);
ein zweites Gehäusebauteil (10 oder 12), wobei eines der Gehäusebauteile statisch befestigbar ist, während das andere an diesem oder in seiner Nähe befestigt ist, wobei die Gehäusebauteile relativ zwischen einer geschlossenen Position, in der die Gehäusebauteile ein im Wesentlichen geschlossenes Gehäuseinneres definieren, und einer offenen Position beweglich sind;

dadurch gekennzeichnet, dass die Gehäusebauteile im Allgemeinen horizontal relativ beweglich sind, wobei der Spender ferner eine Rollenprodukt-Trägerplatte (16) umfasst, die an einem der Gehäusebauteile anbringbar ist, um im Gehäuseinneren ein kernloses Rollenprodukt am Ende zu tragen, und die eine Trägerplattenöffnung (24) definiert; durch

ein Spenderbauteil (40), das unterhalb und in Ausrichtung mit der Trägerplattenöffnung befestigt ist und einen Rollenproduktdurchgang (44) definiert, der eine Verbindung zwischen der Trägerplattenöffnung und einer verengten Auslassöffnung (46) bildet, wobei die Trägerplatte und das Spenderbauteil in Ausrichtung einen länglichen Schlitz (48) definieren; der in Verbindung steht mit der Trägerplattenöffnung und der verengten Auslassöffnung, um das Einsetzen des Führungsendes des getragenen Rollenproduktes in den Durchgang zu erleichtern; und durch

ein längliches Bauteil (50), das an dem Gehäusebauteil befestigbar ist, das nicht die Rollenprodukt-Trägerplatte lagert, angeordnet im länglichen Schlitz, wenn die Gehäusebauteile in der geschlossenen Position sind und abgezogen von dem Schlitz, wenn die Gehäusebauteile in der offenen Position sind.

2. Spender nach Anspruch 1, bei dem die Rollenprodukt-Trägerplatte (16) eine Trägerplattenkante (52) aufweist, die von der Trägerplattenöffnung (24) beabstandet ist, und bei dem der Spender zusätzlich ein Plattensegment (16) umfasst, das an dem Gehäusebauteil angebracht ist, welches die Rollenprodukt-Trägerplatte (10 oder 12) nicht lagert, und zwar oberhalb des länglichen Bauteils (50), wobei die Rollenprodukt-Trägerplatte einen Spalt (54) ausbildet, die sich von der Trägerplattenöffnung zur Trägerplattenkante hin erstreckt, wobei das Plattensegment die Lücke im Wesentlichen verschließt, wenn die Gehäusebauteile in der geschlossenen Position sind und das Plattensegment von der Lücke abgezogen ist, wenn die Gehäusebauteile in der offenen Position sind.

3. Spender nach Anspruch 1 oder 2, bei dem das längliche Bauteil (50) so dimensioniert ist, dass es von dem Spenderbauteil (40) beabstandet ist, wenn es im Schlitz (48) positioniert ist. 5
4. Spender nach einem der vorhergehenden Ansprüche, der zusätzlich mindestens einen Vorsprung (80) umfasst, der von der Trägerplatte (16) in den Raum hinein vorsteht, für den Eingriff durch das Führungsende eines kernlosen Rollenproduktes, das am Ende durch die Trägerplatte (16) getragen wird und in dem Durchgang (44) angeordnet ist, wodurch ein Widerstand gegen eine Bewegung des Führungsendes nach außen von dem Durchgang durch den Spalt (54) geschaffen wird. 10 15
5. Spender nach einem der vorhergehenden Ansprüche, bei dem das erste und das zweite Gehäusebauteil jeweils einen Bodenwandabschnitt (30, 32) umfassen, wobei die Bodenwandabschnitte einander benachbart sind, wenn die Gehäusebauteile (10, 12) in der geschlossenen Position sind, um eine Bodenwand auszubilden. 20 25
6. Spender nach Anspruch 5, bei dem die Bodenwand unter der Rollenprodukt-Trägerplatte (16) angeordnet ist und eine Bodenwandöffnung (66) definiert, welche das Spenderbauteil (40) unterbringt. 30
7. Spender nach einem der vorhergehenden Ansprüche, bei dem die Rollenprodukt-Trägerplatte (16) lösbar an dem Gehäuse (10 oder 12) angebracht ist. 35
8. Spender nach einem der vorhergehenden Ansprüche, bei dem das erste Gehäusebauteil (10) statisch befestigbar ist und die Rollenprodukt-Trägerplatte (16) lagert, während das zweite Gehäusebauteil (12) das längliche Bauteil (50) lagert. 40 45
9. Verfahren zum Einbringen eines kernlosen Rollenproduktes in einen Spender gemäß Anspruch 1, wobei das Verfahren das Öffnen des Spenders umfasst, das Einsetzen des Führungsendes, welches nach außen von dem Mittelteil des kernlosen Rollenproduktes vorsteht, durch den Schlitz (48); und das Schließen des Spenders. 50
10. Verfahren nach Anspruch 9, bei dem der Spender gemäß einem der Ansprüche 2 bis 8 definiert ist. 55
11. Verfahren nach Anspruch 9, bei dem das kernlose Rollenprodukt ein gewickeltes Bahnmaterial umfasst, das in mehrere Blätter vereinzelt ist.

Revendications

1. Distributeur destiné à distribuer une certaine quantité de bande pouvant être déchirée, qui est enroulée et prend la forme d'un rouleau sans mandrin et a une extrémité de tête en saillie depuis le centre du rouleau, le distributeur comprenant en combinaison :

un premier élément de logement (10 ou 12)
 un deuxième élément de logement (10 ou 12),
 l'un des éléments de logement pouvant être monté de manière statique, alors que l'autre est monté sur ou à proximité de celui-ci, les éléments de logement pouvant se déplacer de manière relative entre une position fermée, dans laquelle les éléments de logement définissent un intérieur de logement essentiellement fermé et une position ouverte ;

caractérisé en ce que les éléments de logement peuvent, d'une manière générale, se déplacer horizontalement et dans lequel le distributeur comprenant, en outre, une plaque de support (16) du produit formant un rouleau, qui peut être fixée à l'un des éléments de logement pour supporter, à une extrémité et à l'intérieur du logement, un produit formant un rouleau sans mandrin, définissant une ouverture dans la plaque de support (24) ;

un élément de distribution (40), monté sous et correspondant à l'ouverture de la plaque de support, définissant un passage (44) pour le produit formant un rouleau communiquant entre l'ouverture de la plaque de support et une ouverture de sortie restreinte (46), la plaque de support et l'élément de distribution définissant, en association, une fente allongée (48), communiquant avec l'ouverture de la plaque de support et l'ouverture de sortie restreinte de façon à faciliter l'insertion de l'extrémité de tête du produit formant un rouleau supporté dans le passage ; et

un élément allongé (50) pouvant être fixé à l'élément de logement qui ne porte pas la plaque de support du produit formant un rouleau, placé dans la fente allongée lorsque les éléments de logement sont en position fermée et retiré de la fente lorsque les éléments de logement sont en position ouverte.

2. Distributeur selon la revendication 1, dans lequel la plaque de support (16) du produit formant un rouleau comprend un bord de plaque de support (52) espacé de l'ouverture de la plaque de support (24), et le distributeur comprend, en outre, un segment de plaque (60) fixé à l'élément de logement (10 ou 12), qui ne porte pas la plaque de support du produit

- formant un rouleau, au-dessus de l'élément allongé (50), la plaque de support du produit formant un rouleau formant un espace (54) s'étendant depuis l'ouverture de la plaque de support vers le bord de plaque de support, le segment de plaque fermant essentiellement l'espace lorsque les éléments de logement sont en position fermée et le segment de plaque étant retiré de l'espace lorsque les éléments de logement sont en position ouverte.
3. Distributeur selon la revendication 1 ou 2, dans lequel ledit élément allongé (50) est dimensionné de façon à être espacé de l'élément de distribution (40) lorsqu'il se trouve dans la fente (48).
4. Distributeur selon l'une quelconque des revendications précédentes, comprenant en outre au moins une saillie (80) avançant depuis la plaque de support (16) dans l'espace adjacent à la fente allongée (48), destinée à s'engager avec l'extrémité de tête d'un produit formant un rouleau sans mandrin, supporté à une extrémité par la plaque de support (16), située dans le passage (44) afin d'opposer une résistance au mouvement vers l'extérieur de l'extrémité de tête depuis le passage, à travers l'espace (54).
5. Distributeur selon l'une quelconque des revendications précédentes, dans lequel les premier et deuxième éléments de logement comprennent chacun une portion de paroi inférieure (30, 32), les portions de paroi inférieure étant adjacentes lorsque les éléments de logement (10, 12) sont en position fermée pour former une paroi inférieure.
6. Distributeur selon la revendication 5, dans lequel la paroi inférieure se trouve sous la plaque de support (16) du produit formant un rouleau et définit une ouverture dans la paroi inférieure (66) destinée à recevoir l'élément de distribution (40).
7. Distributeur selon l'une quelconque des revendications précédentes, dans lequel la plaque de support (16) du produit formant un rouleau est fixée de manière amovible au logement (10 ou 12).
8. Distributeur selon l'une quelconque des revendications précédentes, dans lequel le premier élément de logement (10) peut être monté de manière statique et porte la plaque de support (16) du produit formant un rouleau, alors que le deuxième élément de logement (12) porte l'élément allongé (50).
9. Procédé de chargement d'un produit formant un rouleau sans mandrin dans un distributeur selon la revendication 1, ledit procédé comprend l'ouverture du distributeur ; l'insertion de l'extrémité de tête en saillie vers l'extérieur depuis le centre dudit produit formant un rouleau sans mandrin à travers la fente (48) ; et la fermeture du distributeur.
10. Procédé selon la revendication 9, dans lequel le distributeur est défini dans l'une quelconque des revendications 2 à 8.
11. Procédé selon la revendication 9, dans lequel le produit formant un rouleau sans mandrin comprend une bande enroulée pouvant être séparée en une pluralité de feuilles.

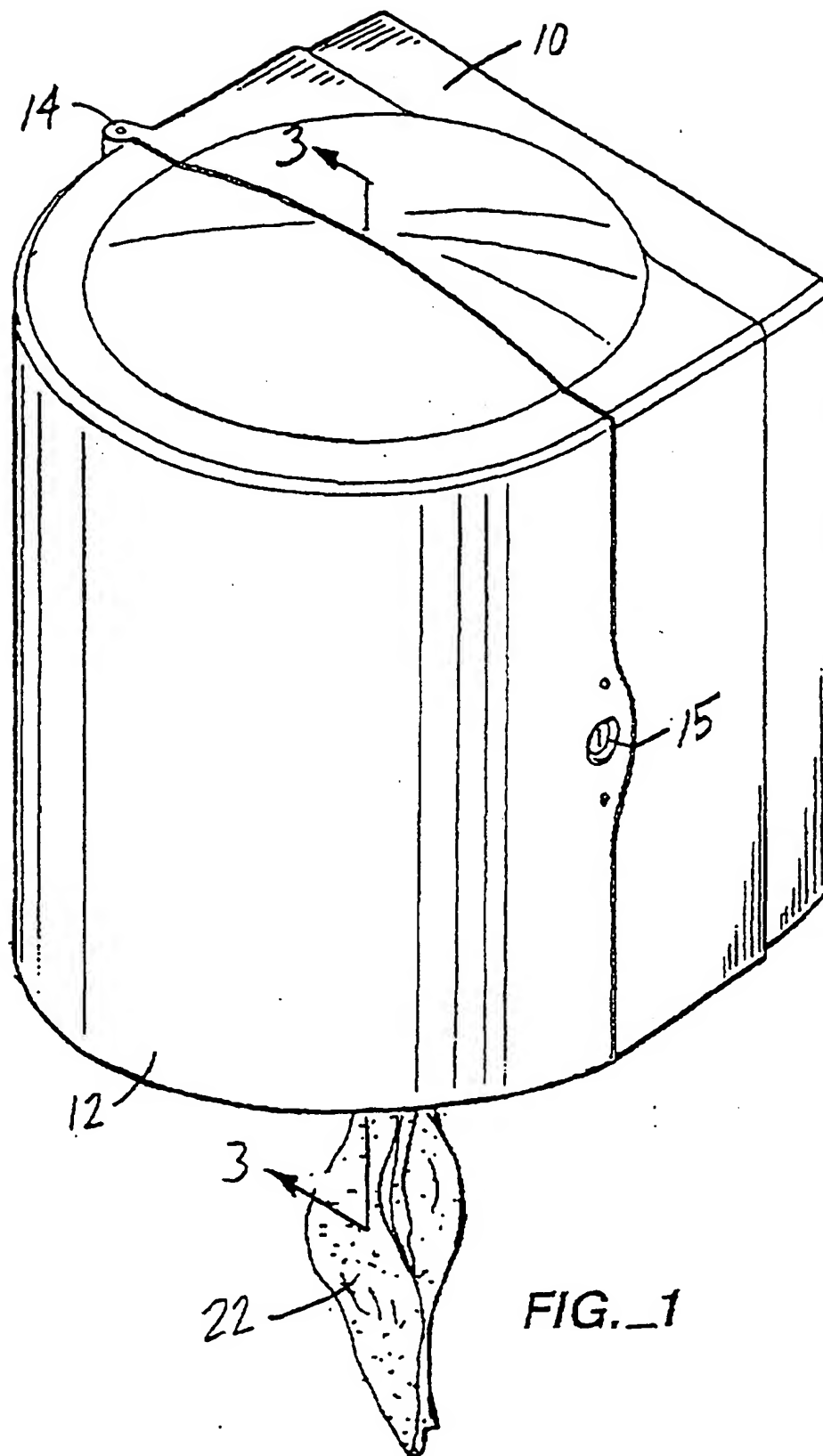


FIG. 1

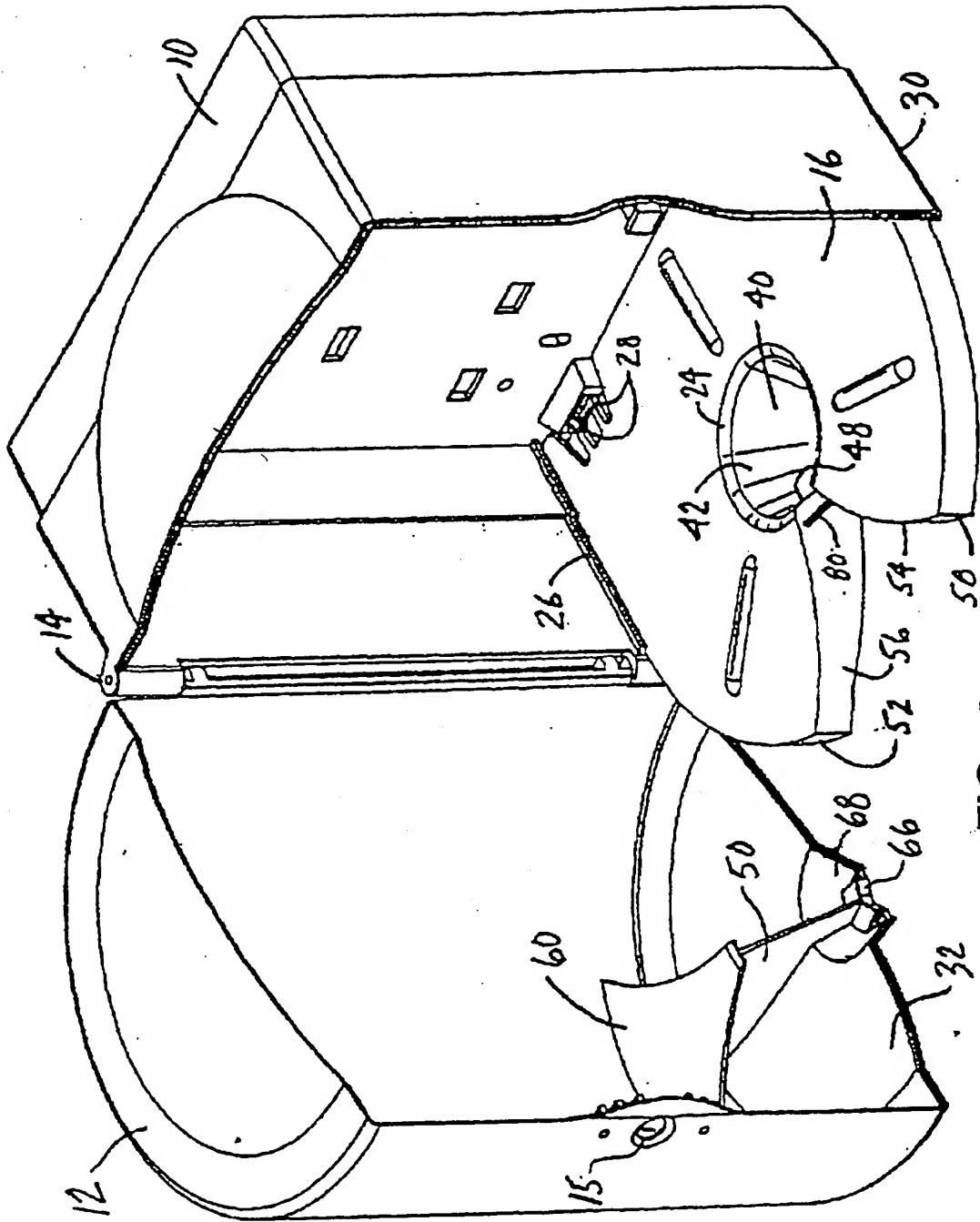
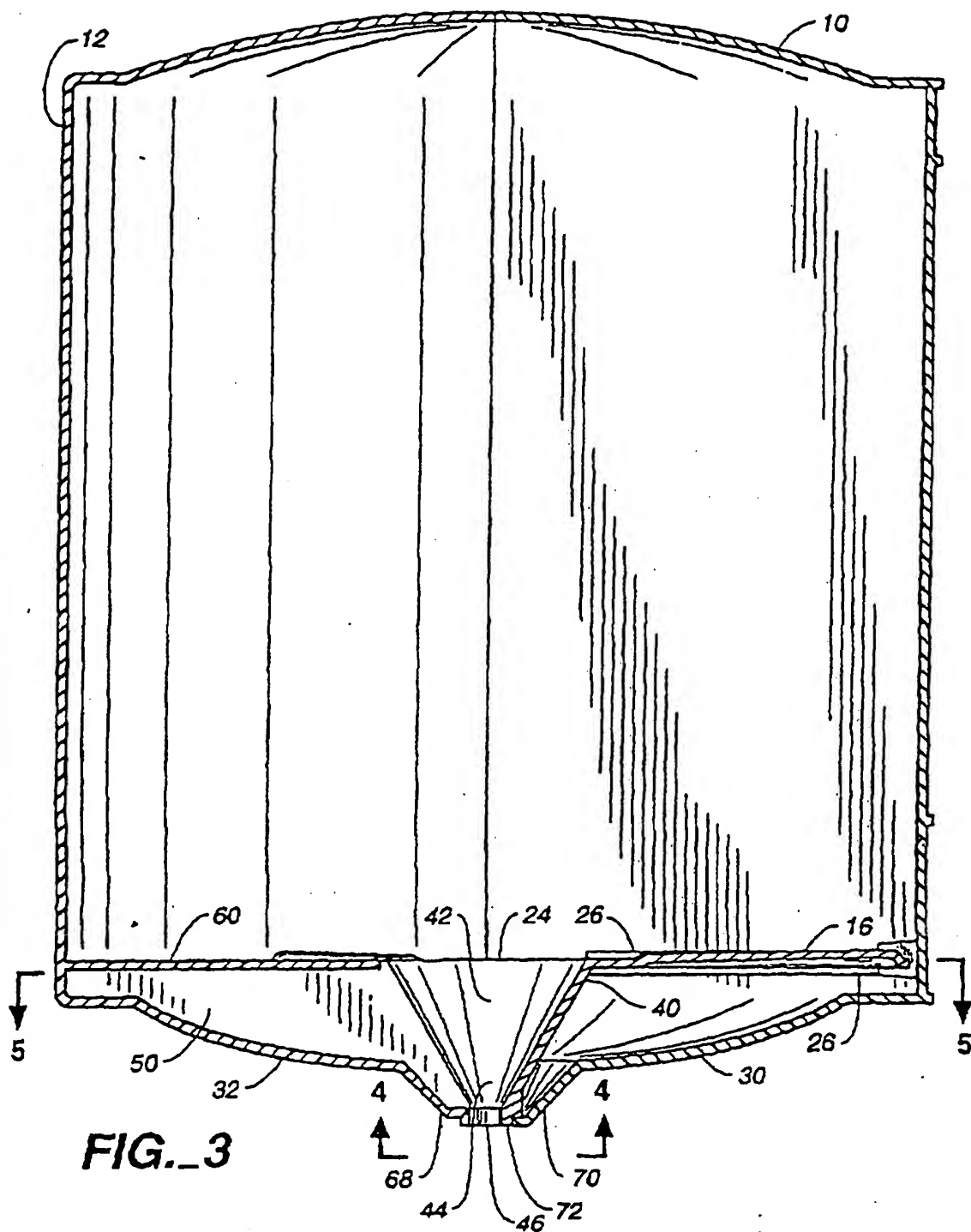


FIG. 2



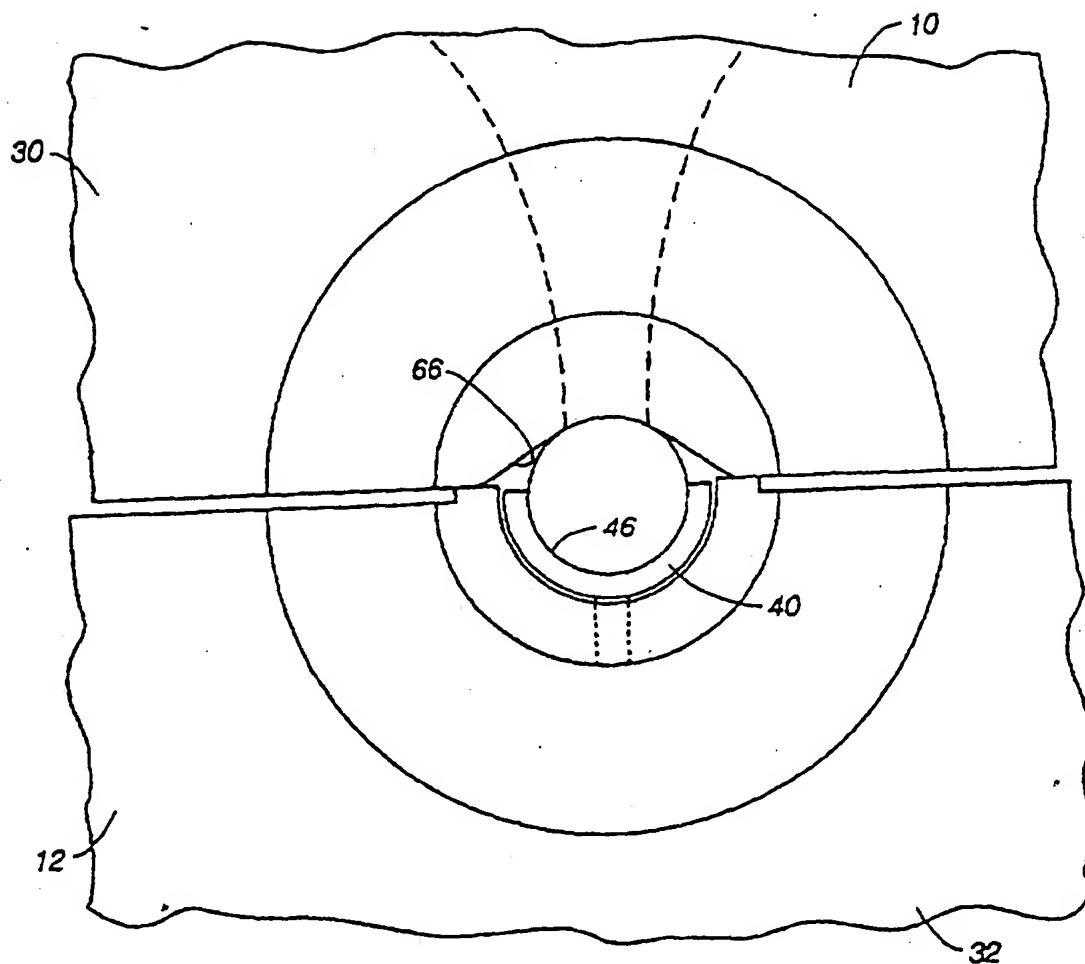


FIG. 4

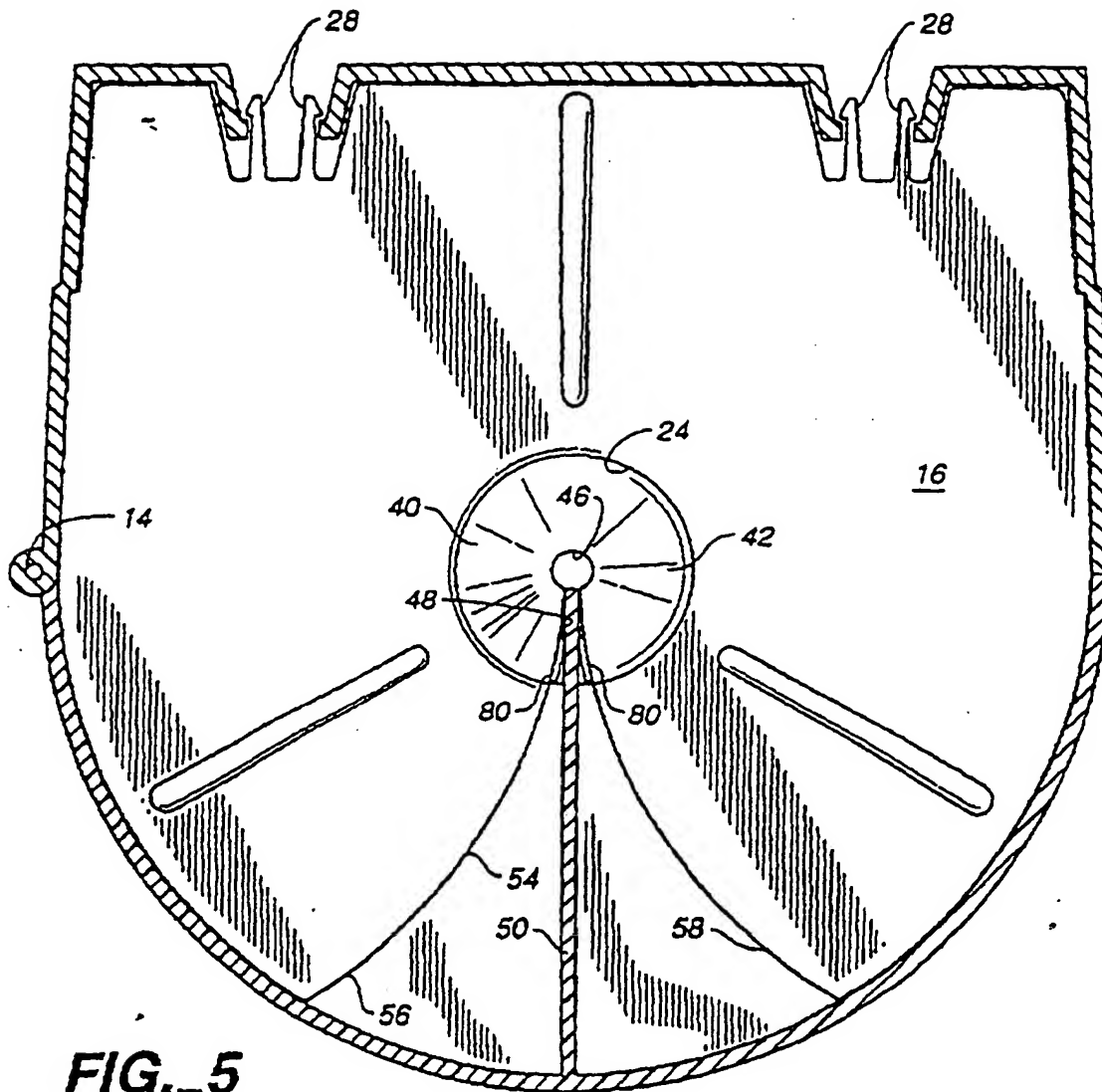


FIG. 5

THIS PAGE BLANK (USPTO)

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

THIS PAGE BLANK (USPTO)